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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,062	12/28/2000	Paul E. McKenney	BEA9-2000-0013-US1	9320
30011	7590	11/05/2004	EXAMINER	
LIEBERMAN & BRANDSDORFER, LLC			HUYNH, KIM T	
12221 MCDONALD CHAPEL DRIVE			ART UNIT	PAPER NUMBER
GAITHERSBURG, MD 20878			2112	

DATE MAILED: 11/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 09/753,062	Applicant(s) MCKENNEY ET AL.	
	Examiner Kim T. Huynh	Art Unit 2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 July 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jippo (US Patent 5432915) in view of Jackson et al. (US Patent 6,473,819)

As per claims 1, 13 and 22, Jippo discloses a method for efficiently handling high contention locking in a multiprocessor computer system, comprising:

- organizing at least some of the processors into a hierarchy;(col.3, line 7-col.4, line 26)
- providing a lock selected from the group consisting of a lock, and a lock which waits using only local memory; and (col.3, line 7-col.4, line 26)
- processing the lock responsive to the hierarchy. (col.3, line 7-col.4, line 26)

Jippo discloses all the limitations as above except interruptible lock.

However, Jackson discloses Spin locks can implement and easily designed to be interruptible. (col.1, lines 38-41)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Jackson's teaching into Jippo's

system so as to have a more sophisticated mechanism in the system. (col.3, lines 9-17)

As per claims 2, 14, 25, Jackson discloses wherein the processing step conditionally acquires the lock. (col.9, lines 20-25), (col.2, lines 12-28)

As per claims 3, 15, 26, Jackson discloses wherein the processing step returns a failure to grant the lock if the lock is not immediately available. (col.1, lines 49-38), wherein by default not available not grant)

As per claims 4, 16, 27, Jackson discloses wherein the processing step unconditionally acquires the lock. (col.6, lines 27-30)

As per claims 5, 17, 28, Jackson discloses wherein the processing step spins on the lock until the lock is available. (col.6, lines 27-30)

As per claims 6, 18, Jackson discloses the method further comprising allowing system interrupts while spinning on the lock. (col.3, lines 45-48)

As per claims 7, 19, 29, Jackson discloses wherein the processing step unconditionally releases the lock. (col.6, lines 27-30)

As per claim 8, Jackson discloses wherein the processing step the processors spin on private memory. (col.5, lines 42-51)

As per claim 9, Jackson discloses wherein the hierarchy includes a data structure having a bit mask indicating which processors of a group are waiting for the lock. (col.6, lines 15-30)

As per claim 10, Jackson discloses wherein the hierarchy includes a data structure having a bit mask indicating which groups of processors have processors waiting for the lock. (col.5, lines 28-41)

As per claims 11, 20, 30, Jackson discloses the method further comprising maintaining a release flag for a group of processors to prevent races between acquisition and release of the lock (col.6, lines 15-30), (col.7, line 60-col.8, line 15)

As per claims 12, 21, 31, Jackson discloses the method further comprising maintaining a handoff flag for a group of processors to grant the lock to a processor requesting an unconditional lock from a processor requesting a conditional lock. (col.8,line 36-col.9,line 36)

As per claim 23, wherein the medium is a recordable data storage medium. (col.3, lines 20-44), wherein queue locks performing as data information storage.

As per claim 24, Jackson discloses wherein the medium is a modulated carrier signal. (col.3, lines 20-44, wherein signals to/from system should be modulated/demodulated as for communicating within system.)

### ***Response to Amendment***

3. Applicant's amendment filed on 7/22/04 have been fully considered but are moot in view of the new ground(s) of rejection.

a. In response to applicant's argument that Jippo fails to disclose or teach interruptible lock. However, Jackson discloses Spin locks can implement and easily designed to be interruptible. (col.1, lines 38-41) Furthermore, Jackson's system

introduces a novel methodology of implementing queue locks that allows for interruptability from external interrupts while eliminating any deadlock conditions.

Permitting the computation agent that has been given ownership of a lock to be able to relinquish ownership to another waiting computation agent when an intervening interrupt is encountered. (col.3, lines 25-59)

Thus, the prior art teaches the invention as claimed and do not distinguish over the prior art as applied.

### **Conclusion**


4. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (571)272-3635 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 9.00AM- 6:00PM.*

*If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (571)272-3632 or via e-mail addressed to [mark.rinehart@uspto.gov]. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications.*

*Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-2100.*

Kim Huynh

Oct. 14, 2004

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

**MARK H. RINEHART  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100**